

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please AMEND the claims in accordance with the following:

1. (CURRENTLY AMENDED) An apparatus where an operating system, read out from a selected device of a multiplexed plurality of devices containing respective operating systems, is started up for starting up a data processing system, comprising:

a storing unit which stores environment data setting a boot from said plurality of devices, where said environment data includes: first variable data including device setting data designating boot candidates for said plurality of devices, second variable data including index data setting a booting order of said boot candidates set by said device setting data, and third variable data in which whether said multiplexing of the plurality of devices is valid or not valid is set;

a boot control unit which decides on a boot device according to data set by said first variable data, said second variable data and said third variable data included in said environment data, and starts up said respective operating system stored in said boot device; and

a control unit which controls setting said environment data of said plurality of devices, setting valid for multiplexing in said third variable data when a first boot candidate included in said device setting data is accessed according to said booting order defined by said second variable data, changing said booting order of said boot candidates in said index data included in said second variable data when an abnormality is detected in said boot device, and clearing said index data of said second variable data to an initial value when booting is successful,

said boot control unit switching said accessed boot device to another boot device according to a changed booting order of said index data and controlling starting up of said respective operating system stored in ~~the other~~ said another boot device.

2. (CANCELLED)

3. (CURRENTLY AMENDED) ~~An~~-The apparatus as set forth in claim 1, wherein said boot control unit clears said index data to said initial value when powering up the data

processing system and selects as said boot device an initially set device in said device setting data.

4. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said boot control unit selects said boot device based on said index data when valid for multiplexing is set in said third variable data and selects as said boot device an initially set device in said device setting data when not valid for multiplexing is set in said third variable data.

5. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 4, wherein said boot control unit updates an index in said index data when valid for multiplexing is set in said third variable data.

6. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 5, wherein said boot control unit selects said boot device based on said environment data and reads in and starts up said operating system stored in said boot device.

7. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said control unit refers to said first variable data and confirms that said boot device is in a slave system has been used for startup when valid for multiplexing is set in said third variable data and said index data is not set to said initial value.

8. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 7, wherein said control unit issues a warning message showing that an abnormality has occurred in a master boot device of a master system when recognizing that said boot device in said slave system has been used for startup.

9. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 7, wherein said control unit clears said second variable data to said initial value when there is valid is set in said third variable data and said second variable data is not set to 0.

10. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said control unit sets not valid for multiplexing in said third variable data when the third variable data is present in said storing unit and said plurality of devices are not set for redundant operation.

11. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said control unit cuts off said booting when detecting an-said abnormality in said boot device without regard as to if there is said third variable data in said storing unit and rewrites said device setting data designating said boot candidates in said first variable data.

12. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said storing unit is a nonvolatile memory and wherein said boot control unit and said control unit rewrite said second variable data and said third variable data stored in said storing unit.

13. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said boot control unit executes said booting by boot firmware stored in said storing unit.

14. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 1, wherein said control unit executes controlling multiplexing of said plurality of devices based on system software read out from said boot device and stored in said storing unit, said system software checks multiplexing of the plurality of devices in the system, and processes switching said boot device to-said another device when an-said abnormality has occurred in said boot device.

15. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 3, wherein said boot control unit selects said boot device based on said environment data and reads in and starts up said operating system stored in said boot device.

16. (CURRENTLY AMENDED) An-The apparatus as set forth in claim 4, wherein said boot control unit selects said boot device based on said environment data and reads in and starts up said operating system stored in said boot device.

17. (CURRENTLY AMENDED) A method for starting up data processing system in which an operating system read out from a selected device of a multiplexed plurality of devices containing respective operating systems, is started up for starting up the system, comprising:

storing environment data setting a boot from said plurality of devices, where said environment data includes: first variable data including device setting data designating boot candidates for said plurality of devices, second variable data including index data setting a booting order of said boot candidates set by said device setting data, and third variable data in which whether said multiplexing of the plurality of devices is valid or not valid is set;

deciding on a boot device according to data set by said environment data and executing a boot control which starts up said respective operating system stored in said boot device; and setting valid for multiplexing in said third variable data when a first boot candidate included in said device setting data is accessed according to said booting order defined by said second variable data, changing said booting order of said boot candidates in said index data included in said second variable data when an abnormality is detected in said accessed boot device, clearing said index data of said second variable data to an initial value when booting is successful, and switching said accessed boot device to another boot device according to a changed booting order of said index data and controlling starting up of said respective operating system stored in the other-said another boot device.

18. (CURRENTLY AMENDED) A computer-readable recording medium storing a program which starts up an operating system read out from a selected device of a multiplexed plurality of devices containing respective operating systems, and starts up a data processing system, the program which when executed by a computer causes the computer to perform the a process, comprising:

storing environment data setting a boot from said plurality of devices, where said environment data includes: first variable data including device setting data designating boot candidates for said plurality of devices, second variable data including index data setting a booting order of said boot candidates set by said device setting data, and third variable data in which whether said multiplexing of the plurality of devices is valid or not valid is set;

deciding on a boot device according to data set by said environment data and executing a boot control which starts up said respective operating system stored in said boot device; and

setting valid for multiplexing in said third variable data when a first boot candidate included in said device setting data is accessed according to said booting order defined by said second variable data, changing said booting order of said boot candidates in said index data included in said second variable data when an abnormality is detected in said accessed boot device, clearing said index data of said second variable data to an initial value when booting is successful, and switching said accessed boot device to another boot device according to a changed booting order of said index data and controlling starting up of said respective operating system stored in the other-said another boot device.